


TECHNICAL MEMORANDUM

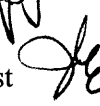
Utah Coal Regulatory Program

July 22, 2004

OK

TO: Internal File

THRU: Gregg Galecki, Environmental Specialist III, Team Lead 

FROM: Jerriann Ernstsens, Ph.D., Environmental Specialist II, Biologist 

RE: SITLA Lease, Canyon Fuel Company, Dugout Canyon, C/007/0039, Task ID #1915

SUMMARY:

The Division received an amendment in 2004 that addresses the expansion of the proposed SITLA lease area east of current permit boundary. This memo describes the review of the biology and cultural sections for the amendment.

The Division is implementing, over time, the plan to develop Master TAs for all coal mines. This review includes careful examination of biological- and cultural-related information in Environmental Resources sections for the Dugout MRP and stand-alone Amendments. There is some review of Operations sections as it pertains to subsidence and high-value habitats. This amendment does not include surface disturbance for facilities, therefore, this review does not include careful examination of Operations and Reclamation sections of the MRP and stand-alone Amendments.

The proposed expansion area is 2,360 acres with zero acres of surface disturbance. The project is in T13S R13E Sections 17, 20, 21, 28, 29, and 30 (partial and entire sections). The acreage and section numbers do not include transportation or power-line corridors.

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TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

For the overall Dugout Mine project, there is the “Dugout Canyon Mining and Reclamation Plan”, *stand-alone* amendments, and exploration amendments. Currently, there are at least three stand-alone amendments:

- “Dugout Canon Mine – Leach Field Addendum A-1” (LFA, March 2001)
- “Refuse Pile Amendment – Dugout Canyon Mine” (RPA, January 2003)
- “Methane Degassification Amendment” (MDA, 2003/2004).

These stand-alones provide exclusive information and attachments for the proposed projects.

Note, the Permittee withdrew the 2003 (spring) submittal for the MW06 and MW08 degassification wells.

There were two submittals for the Degassification Amendment. The Division reviewed the submittal for G1-G3 wells in 2003 and reviewed an amendment to this stand-alone for G4-G6 wells in 2004. The Permittee provided attachments for the vegetation and raptor surveys for G1, G2, G3, G4, G5, and G6 degas well sites with the 2004 submittal.

The Division reviewed an exploration amendment (DUGO104 and DUGO204) within the proposed SITLA lease area in 2004.

The SITLA Lease Amendment is not a stand-alone document. The Permittee will incorporate approved information to the MRP.

The Nickens (1984) archeological report has pages that are missing, duplicated, blank, or out of order. The Permittee must provide a complete and orderly Nickens report or remove the report from the application (R645-301-121.200).

The *Study To Determine The Effects Of Coal Development On Wildlife In Southeastern Utah* (1979-1981; MRP-Appendix 3-2) has the following missing pages: 1-10 and 12-14 (R645-301-121.200).

Findings

The Division considers information in the application inadequate to meet the minimum Permit Application Format and Contents section of the General Contents regulations. Prior to approval, the Permittee must act in accordance with the following:

R645-301-121.200, Provide a complete and orderly Nickens report or remove the report from the application. • Provide the missing pages in a wildlife report. • Provide a current TES species list in the MRP (such as the one in the list in the Degassification stand-alone).. • Provide a reference to the current Mexican Spotted Owl report (EIS 2003/2004; in Methane Degassification Amendment) in the MRP (section 332) or add the report as an appendix in Chapter 3.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

The tables below provide a list of information in the appendices including: titles of documents, dates of documents, names and organizations of those participating in Biological and Cultural Resource data collection, and locations of resource collection projects. The heading at the top of each table provides the binder title where individual documents are located.

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MRP

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
App. 3-1: MRP Vegetation (veg) Data.			
1. Quantitative veg survey.	Aug. 1996	Patrick Collins (Mt. Nebo Scientific, INC.)	Areas proposed for disturbance for the main facilities site.
2. Shrub density.	Sept. 1981	C. Slaboszewicz (Eureka Energy Company)	Sage-point Dugout Canyon project.
3. Quantitative veg survey.	Jan. 1980	Steve Richardson (USU)	Sage-point Dugout Canyon project (T13S R12E).
4. Productivity for unspecified reference area.	Aug. 1996	George Cook (NRCS)	Abandoned roadcut in Dugout Canyon.
5. Qualitative veg survey for deciduous streambank reference area. Approximate cover by type and TES.	1997	Bob Thompson (USFS; Manti LaSal Nat. Forest)	Soldier Creek; north of main facilities for Soldier Canyon Mine.
6. Quantitative veg survey.	Dec. 1997	Patricia Johnston (EarthFax Engineering)	Areas proposed for disturbance for the main facilities site.
7. Range condition for five reference areas.	July, 1981	C. Slaboszewicz (Eureka Energy Company)	Sage-point Dugout Canyon project.
8. Productivity for PJ and riparian reference areas.	Dec. 1997	George Cook (NRCS)	No specific description.

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9. Range site evaluation for PJ community.	Jan. 1994	NRCS	No specific description.
10. Range site evaluation for narrow leaf cottonwood community.	Nov. 1993	NRCS	No specific description.
11. Range site evaluation for streambank community.	Nov. 1993	NRCS	No specific description.
12. Quantitative veg survey of PJ and riparian range sites as possible substitutes for reference areas.	April / September 1998	Patricia Johnston (EarthFax Engineering)	Fish Creek Canyon.
13. DOGM authorization for Permittee to mulch.	Sept. 1998	DOGM	Wildlife mitigation site.

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LEACH FIELD ADDENDUM A-1 (2001)

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Att. 3-1: LFA Vegetation Report. Vegetation inventory for wastewater drain field.	May 2000	Patricia Johnston (Environmental and Engineering Consulting)	Approximately 1.2 mile below the mine disturbed site.

REFUSE PILE AMENDMENT (2003)

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Att. 3-1: RPA Vegetation Data. 1. Vegetation study refuse pile area.	May 1998	Patricia Johnston (EarthFax Engineering)	"Project Area"!
2. Productivity for reference (Top Soil Storage) and refuse (Borrow) areas.	June 1998	George Cook (NRCS)	No specific description.
3. Farm land letter.	April 1996	William Broderson (NRCS)	No specific description.
4. Photographs of site.	1998	Vicky Miller	Refuse pile area.
5. Dugout Canyon Mine refuse pile vegetation reference area.	Jan. 2003	Patrick Collins (Mt. Nebo Scientific, INC.)	1.2 miles northeast of the proposed refuse area (left hand side of road.

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METHANE DEGASSIFICATION AMENDMENT (2003/2004)

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Att. 3-1: MDA 1. Vegetation of the Dugout Mine Degas Borehole Sites.	July 2003	Patrick Collins (Mt. Nebo Scientific, INC.)	T13S R12E, Section 24 T13S R13E, Section 19
2. Production and condition of proposed degas well sites and reference areas.	Sept. 2003	Dean Stacy (NRCS)	Project area; no specific description.

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MRP

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
App. 3-2: MRP DWR Report. 1. Study to determine the effects of coal development on wildlife in southeastern Utah. 2. Nest survey – birds of special interest.	Jan. 1982 April 1998	DWR Patricia Johnston (EarthFax Engineering)	Sage-point Dugout Canyon project (T13 and 14S; R11, 12, and 13E). Dugout disturbance area.
App. 3-3: MRP Fish and Wildlife Data. 1. Revised Final Fish And Wildlife Plan For The Proposed Sage Point. 2. Prairie dog and black-footed ferret survey letter. 3. Raptor survey. 4. Letters concerning wildlife (aquatic, raptor, big game) monitoring and mitigation plan. 5. Observation of high-interest raptor nests of the sage point/dugout canyon	Aug. 1981 July 1980 Jan. 1996 1979 1980 July 1984	Steven Viert (Environmental Research and Technology, INC.) Larry Wilson (DWR) Bill Bates (DWR) Paul Anderson (EEC) Mary Ann Wright (DOGM) Hayden-Wing Associates	Dugout Canyon project area. Sage-point Dugout Canyon project: surface disturbance and access corridors. Dugout and Soldier Canyon Mines. Sage-point Dugout Canyon project. County road to Dugout Canyon mine facilities.

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project.			
6. Raptor letter	Jan. 1996	Barry Barnum (Utah Fuel Company)	Dugout area.
7. Big game letter	Jan. 1996	Bill Bates (DWR)	Gordon and Dugout Creek Canyon areas.
8. Bat survey.	Sept. 1997	J Perkins and J Peterson	Riparian zone of Dugout Creek and a small tributary.
9. Raptor survey	2003	Chris Colt (ODOR)	Large area including mine permit area.

CONFIDENTIAL FILE

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Chapter 3 Data.			
1. Raptor survey.	June 1997	Ben Morris (DWR)	Soldier Creek, Sufco, and Skyline mine areas (Canyon Fuel Co.).
2. Wildlife map.	Sept. 1981	Canyon Fuel Co.	T13S R12E T13S R12E

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REFUSE PILE AMENDMENT (2003)

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Att. 3-2: RPA Wildlife Data. 1. TES Letter: Powerline, Telephone line, and Road Improvement. 2. Raptor map. 3. Raptor map. 4. Raptor map.	April 1996 Unknown 1996 1995	Robert Williams (USFWS) Unknown Bill Bates (DWR) Unknown	T13S R12E T14S R11E T14S R12E Approximately north and east of proposed refuse area. Approximately east and south of sewage lagoon area. No specific description.
Att. 3-3: RPA T&E Data. 1. Threatened, endangered, and candidate species list. 2. Special interest wildlife species list.	June 2002 Feb. 1999	DWR DWR	Carbon County. Carbon County.

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METHANE DEGASSIFICATION AMENDMENT (2003/2004)

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Att. 3-2: MDA 1. Threatened, endangered, and candidate species list.	July 2003	DWR	Carbon County
2. Mexican spotted owl survey Dugout and Pace Canyon. 2004 Borehole Program.	2003	Tom Paluso (Environmental and Engineering Consultants, EIS)	Project area in T13S R12E T13S R13E
Att. 3-3: MDA Raptor survey	2003	Chris Colt (DWR	Large area including mine permit area.

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SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Cultural and Historic Reports.			
1. Cultural Resource Evaluations Of Sites In The Dugout Canyon Mine Permit Application Area.	Dec. 1995	Richard Hauck (Archeological-Environmental Research Corporation (AERC))	T13S R12E
2. Cultural Resource Evaluations Of Canyon Fuels Sage Project Holding Tanks In The Dugout Canyon Locality.	Sept. 1997	Richard Hauck (Archeological-Environmental Research Corporation (AERC))	T13S R12E

REFUSE FILE AMENDMENT (2003)

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Att. 4-1: RPA Cultural and Historic.			
1. An Intensive Cultural Resource Survey And Inventory Of The Proposed Realignment For The Dugout Canyon Road Upgrade.	June 1996	John Senulis (Senco-Phenix)	T13S R12E T14S R12E
2. An Intensive Cultural Resource Survey And Inventory Of The Proposed Topsoil Storage Area Along Dugout Canyon Road.	June 1998	John Senulis (Senco-Phenix)	T14S R12E

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METHANE DEGASSIFICATION AMENDMENT (2003/2004)

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
Att. 4-1: MDA An Intensive Cultural Resource Survey And Inventory Of The 2003 Dugout Canyon Mine Drill Holes and Access Roads.	June 2003	John Senulis (Senco- Phenix)	T13S R12E T13S R13E

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SITLA LEASE AMENDMENT, MARCH 2004

SURVEY	REPORT DATE	RESPONSIBLE PERSON	SURVEY LOCATION
App. 4-3: Cultural.			
1. Archeological Evaluation In The Proposed Sage Creek – Dugout Canyon Project Area.	Sept. 1981	Archeological Environmental Research Corp.	Facilities area and communication / transportation corridors. T12S R12E T13S R11E
2. Intensive Archeological Surface Evaluations Of The Proposed Sage Point – Dugout Canyon Project.	Sept. 1980	F Hauck (Archeological Environmental Research Corp.)	Facilities area and communication / transportation corridors. T12S R12E T13S R11,12,13E T14S R11,12E
3. Cultural Resource Inventory Of Three Coal Exploration Drill Holes In The Pace Canyon Locality.	June 1981	F Hauck (Archeological Environmental Research Corp.)	T13S R12,13E
4. Cultural Resource Inventory Of 1983 Drill Hole Locations.	June 1983	Michael Metcalf (Metcalf-Zier Archaeologists, INC.)	T13S R12,13E
5. Sample-Oriented Cultural Resource Inventory.	July 1984	Paul Nickens (Nickens and Assoc.)	Very large survey that included sample units in T13S R13E and Soldier Creek Tract.

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6. An Intensive Cultural Resource Survey And Damage Assessment Of Road Construction In Cow Canyon.	Feb. 1999	John Senulis (Senco-Phenix)	T13S R13E
7. An Intensive Cultural Resource Survey And Inventory Of The Dugout Canyon Mine Drill Holes And Access Roads.	June 2001	John Senulis (Senco-Phenix)	T13S R12E T13S R13E
8. An Intensive Cultural Resource Survey And Inventory Of The 2003 Dugout Canyon Mine Exploration Drill Holes And Access Roads.	June 2003	John Senulis (Senco-Phenix)	T13S R12E T13S R13E
9. An Intensive Cultural Resource Survey And Inventory Of The 2003 Dugout Canyon Mine Pace Canyon Exploration Drill Holes Block Area And Access Roads.	Oct. 2003	John Senulis (Senco-Phenix)	T13S R13E
10. Dugout Canyon Permit Extension (U04SC0326).	April 2004	John Senulis (Senco-Phenix)	T13S R13E
11. An Intensive Cultural Resource Survey And Inventory Of The 2004 Dugout Canyon Mine Exploration Drill Holes And	May 2004	John Senulis (Senco-Phenix)	T13S R13E

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Access Roads.			
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The Permittee must relocate the cultural and historic information from the Refuse Pile Amendment (2003) and Methane Degassification Amendment (2003/2004) to the Confidential File. Furthermore, compile the newly submitted cultural reports (SITLA Lease Amendment, March 2004) into the Confidential File.

The Permittee must relocate the biology-related information from the Confidential File to the MRP. This information is public information. (R645-300-124.330).

Findings

The Division considers information in the application inadequate to meet the minimum Reporting of Technical Data section of the General Contents regulations. Prior to approval, the Permittee must act in accordance with the following:

R645-300-124.330, Relocate confidential and non-confidential information to appropriate document files.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

Tables in the Reporting of Technical Data section provide administrative information for all cultural/historic-related appendices and attachments located in MRP and Amendment volumes.

Before the Permittee submitted the SITLA Lease Amendment, the Confidential File, Refuse Pile Amendment (2003), and Methane Degassification Amendment (2003/2004) contained cultural/historic-related documents of Dugout. These documents provide results for surveys west of the proposed SITLA lease area. The Division, therefore, requested additional information that focuses on the SITLA lease area. In response, the Permittee submitted

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numerous documents dating from 1980 to the present (currently all in the SITLA Lease Amendment). Only two of these recently submitted documents pertain directly to the SITLA lease area:

- John Senulis May 2004 An Intensive Cultural Resource Survey And Inventory Of The 2004 Dugout Canyon Mine Exploration Drill Holes And Access Roads.
 - o Permit number: UO4SC440p; SPUT-474
 - o Location: Near the proposed exploration hole (DUG0104) and along access road. The author did not consider the other 2004 drill hole projects (DUG0204, DUG0304, and G6) because those areas had been previously surveyed.
 - o Method:
 - Class I – Literature search (same as the April 2004 report).
 - Class III – Intensive field survey of the 400 x 400 foot proposed disturbed site and 30 meter right-of-way for the access road.
 - o Findings: No cultural resources were observed within the survey area.
 - o Recommendation: The drill project will not affect cultural resources and should receive archeological clearance without stipulation.
 - o SHPO communications: The Division will initiate the Consultation process with SHPO prior to the approval of this amendment.
 - o DOGM: Comments concerning the Class I survey are the same as for the April 2004 report. No comments concerning the findings for the Class III survey.
- John Senulis April 2004 Dugout Canyon Permit Extension (U04SC0326).
 - o Permit number: No permit number.
 - o Location: Dugout Canyon Mine area.
 - o Method: Class I – Literature search.
 - o Findings: Brief overview of major results from the following reports - AERC (1980), Metcalf-Zier (1983), and Senco-Phenix (2001, 2003a, 2003b). The author describes five sites and mentions that none are eligible.
 - o Recommendation: None of the five sites are recommended for nomination for the NRHP. Further surveys of the area will unlikely provide positive results for eligible cultural or historic findings. The area within the SITLA lease area is steep with narrow canyons, which were not favored by prehistoric peoples. Mining related operations were conducted in these canyons, but sites observed to date are not recommended for NRHP. The project does not include surface disturbance and should receive archeological clearance without stipulation.
 - o SHPO communications: The Division will initiate the Consultation process with SHPO prior to the approval of this amendment.
 - o DOGM: This report pertains to the SITLA Lease Amendment only because it mentions the unlikelihood of eligible artifacts within the proposed permit area because of local terrain.

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Although the Permittee has conducted many cultural evaluations over the years, there are only two ground surveys (Senco-Phenix, June 2001 and May 2004) conducted within the proposed SITLA lease area. Both surveys were relatively limited in size and not far into the permit boundary (2000' east of the permit boundary). Regardless, both surveys show that there are no sites recommended for the NRHP within the SITLA lease area.

Mr. Senulis considers that the SITLA project will have no effect on cultural or historic properties (April and May 2004). Although much of the SITLA lease area has never been surveyed, he supports there is little chance of finding eligible properties because historic peoples did not prefer steep terrain such as within the project area. He also stresses that the project does not include surface disturbance. Mr. Senulis does not recommend conducting further surveys at this time.

The Division contacted Kenny Wintch (SITLA archeologist; Spring and Summer 2004) several times concerning the SITLA lease area. The Division discussed the nature of the project and clarified that there are only two surveys within the proposed area. The Division stressed that there are no plans for surface disturbance except surface disturbances caused by subsidence. Mr. Wintch supported the consultant's recommendation of no further surveys. The Division assesses that the Permittee should not conduct additional surveys or evaluations for this amendment because:

- No planned surface disturbances.
- No known NRHP eligible sites.
- Little probability of unknown NRHP eligible sites.

The Division supports a finding of "no effect" to cultural or historic properties and that the permit should receive clearance.

Findings

The Division considers information in the application adequate to meet the minimum Historic and Archeological Resource Information section of the Environmental Resource Information regulations. However, the Division will send a finding of "no effect" to SHPO for Consultation. Final decision concerning the SITLA lease area will come after the Division receives a response from SHPO.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Analysis:

Tables in the Reporting of Technical Data section provide administrative information for all vegetation-related appendices and attachments located in MRP and Amendment volumes. None of the documents focus directly on the proposed SITLA lease area. This project does not include surface disturbances for mine facilities or access corridors. The Division, therefore, does not require a quantitative vegetation survey for assessing reclamation success for this project. The only consideration at this time is the need for localized vegetation evaluations for habitats of high value (i.e., streams, drainages, and springs) located within the zone of subsidence.

The documents listed in the Tables that indirectly relate to the SITLA project include evaluations that focus on reference areas or range sites with habitats of high value. These evaluations (NRCS, EarthFax, and USFS) may be important in the event that habitats of high value occur within the zone of subsidence. (Operations section details these subsidence-related considerations. Refer to R645-301-332; R645-301-322.220).

The proposed SITLA lease area includes the following community types: sage (S), mixed conifer (MC), Douglas fir (DF), quaking aspen (QA), deciduous stream bank and riparian (DSR), and ponderosa (PP). Relative proportions of community types within the proposed SITLA area are:

- Primary: S, MC, and DF.
- Secondary: QA and DSR.
- Tertiary: PP.

The MRP provides summaries of quantitative vegetation analysis for all community types in the disturbed area, which does not include the DSR community type. None of the descriptions (pg.3-3 to 3-9) relate to the proposed SITLA area.

The Refuse Pile Amendment contains historical information that could potentially confuse reviewers. The Amendment refers to previous disturbance caused by the extraction of gravel. This gravel was used to build the adjacent county road. For reclamation purposes, reviewers should refer to the associated TA (TA_SR02D-1.doc, Feb. 24, 2003, Vegetation Section) for clarification of the vegetation and "disturbances" on site.

Findings:

The Division considers information in the application adequate to meet the minimum Vegetation Resource Information section of the Environmental Resource Information regulations.

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FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Analysis:

Tables in the Reporting of Technical Data section provide administrative information for all fish/wildlife-related appendices and attachments located in the MRP and Amendment volumes. The following list provides summary information of the reports that directly or indirectly pertain to the proposed SITLA lease area:

- MRP - Appendix 3-2: DWR (1979-1981) Study To Determine The Effects Of Coal Development On Wildlife In Southeastern Utah.
- MRP - Appendix 3-3: Viert (1981) Revised Final Fish And Wildlife Plan For The Proposed Sage Point.
- MRP - Appendix 3-3: Hayden-Wing (1984) Observation Of High-Interest Raptor Nests OF The Sage Point Dugout Canyon Project.
- MRP - Appendix 3-3: Barnum (1996) Letter to Richard White.
- MRP - Appendix 3-3: Bates (1996) Letter to Vicki Bailey.
- MRP - Appendix 3-3: Perkins and Peterson (1997) Bat Survey For The Dugout Canyon Mine.
- MRP - Appendix 3-3: DWR (2003) Raptor Survey.
- Methane Degassification Amendment – Attachment 3-2: DWR (2003) TES species lists for Carbon County.
- Methane Degassification Amendment – Attachment 3-2: Tom Paluso (2003) Mexican Spotted Owl Survey Dugout and Pace Canyon.

GENERAL WILDLIFE

The *Study To Determine The Effects Of Coal Development On Wildlife In Southeastern Utah* (1979-1981; MRP-Appendix 3-2) provides baseline data for wildlife populations, condition, and behavior within the Sage-point Dugout Canyon project (T13 and 14S; R11, 12, and 13E). The goal of the study was to return to the sample sites after mining operations began to compare the effects of mining on wildlife. Reviewers should note that there are missing pages from this report: 1-10 and 12-14 (see R645-301-121.200 for deficiency).

The methods for the wildlife study included

- Eight transects: mine portal (2), roads (2 extending from the Dugout Canyon road), coal conveyor system (2), and coal preparation area (2)

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- Four controls in areas of no planned disturbance: riparian (west slope of Corbula Canyon), conifer-brush (east slope of Corbula Canyon), pinyon-juniper (one mile west of Soldier Creek road), and desert scrub (Clark's Valley).

The report details basic descriptions of vegetation community types with productivity values. It also details quantitative "monitoring" (survey) results for each of the wildlife types found in each of the four-habitat/community types. Wildlife types include reptiles, birds (nongame and raptors), and mammals (big game: elk, mule deer, antelope, medium: e.g., rabbits, coyotes, cats, bears, marmots, and small animals).

This study provides clear methods and results for the baseline of wildlife populations, condition, and behavior. The goal was to return to the study sites after mining operations began. As far as the Division can determine, the only follow up was the *Revised Final Fish And Wildlife Plan For The Proposed Sage Point* (Aug. 1981). This document, however, is not the follow up study to determine the effects of mining on wildlife.

The Division does not know the status of the follow up study to determine the effects of mining on wildlife. The Permittee must include brief details of the agreement to conduct the follow up study in the MRP narrative in section 322. As far as the Division can decipher, the Permittee would conduct the follow up study if DWR could not return (specified in the Aug. 1981 report). The Permittee must briefly describe the project plan and status. If it is no longer in effect, provide a letter from the overseeing agency showing the authorization to cease the monitoring program. If it is still in effect, include a plan for the follow up study and provide dates and overseeing agency (or contractor). (R645-301-322.200).

The *Revised Final Fish And Wildlife Plan For The Proposed Sage Point* (Aug. 1981; MRP-Appendix 3-3) is a plan to provide means to minimize negative effects of surface disturbance through monitoring activities, revegetation projects, and mitigation programs. Some of mitigation programs recommended by the contractor (Viert, 1981) include:

- Stockpile vegetation and stone debris before topsoil removal to provide shelter and nesting sites.
- Restore and cultivate hayfields in North Clark Valley to provide mule deer food supplies.
- Chain pinyon-juniper stands to create edge effects.

This wildlife plan also includes recommendations for the Permittee to reclaim habitats of high value (deciduous streambank, agricultural fields, and critical mule deer habitat), educate mine personnel, report TES species, construct power lines according to Electric Transmission System's guidelines, install protective fencing, avoid blasting and massive earthwork from one hour before sunrise and sunset to two hours after sunrise and sunset from April through June, and provide nesting boxes.

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Key to this plan is the statement (pg. 4-1) that the Permittee will conduct wildlife and resource monitoring if DWR does not return to implement the planned follow up study (DWR, 1982). This report mentions coordination efforts between the Permittee and DWR for wildlife monitoring to continue through the end of the extended responsibility period. Assessment of successful wildlife rehabilitation projects include monitoring revegetated areas and comparing wildlife usage between reclaimed and control areas (probably areas selected in the DWR 1982 report).

The report specified that monitoring will occur at a greater frequency for high value habitats and "more important wildlife groups" (pg. 4-2 of the report). Wildlife monitoring will begin after substantial vegetation has returned to reclaimed sites. Yearly monitoring will occur for more important wildlife groups and at least every five years for less important groups. Monitoring will continue until the Permittee successfully mitigates impact. Page 4-3 provides specific monitoring methods and time schedules for some of the wildlife groups. The "environmental coordinator" will submit monitoring results to DOGM and DWR. This coordinator will establish successful mitigation.

The Division does not know the status of the monitoring commitments. The Permittee must include details of the commitments in the MRP narrative in section 322. The Permittee must briefly describe the project plan and status. If it is no longer in effect, provide a letter from the overseeing agency showing the authorization to cease the monitoring program. If it is still in effect, include a list of the species monitored, a timetable of previous and future monitoring dates (species specific), and the agency (contractor) overseeing the project. (R645-301-322.200).

The letter drafted by Bill Bates (1996, DWR; MRP-Appendix 3-3) details elk and deer range. The accompanying maps apparently do not include the proposed SITLA lease area. The letter indicates that a wildlife map, such as Plate 3-2 (MRP), does not clearly show the feeding migration patterns of these ungulates. To truly define the possible impacts of mining to these animals, it is necessary to coordinate with DOGM and DWR for specifics of each site. This necessity is especially critical as it pertains to the follow up wildlife study and monitoring program described above. It is also critical to communicate with DOGM and DWR when amendments include surface disturbances or changes in access routes or access usage.

During the review for the exploration holes in the proposed SITLA lease area, the Permittee changed plans to drill (starting second week of June 2004) during the exclusionary period for mule deer. The Permittee contested the exclusionary period, so DWR reevaluated the site. Their conclusion was that the area around the drill hole sites had been heavily logged since DWR originally mapped the wildlife habitat for that area. DWR waived the exclusionary period for the mule deer calving for the drill hole project (DUGO104 and DUGO204) for 2004.

The Bat Survey For The Dugout Canyon Mine (1997, Perkins and Peterson; MRP-Appendix 3-3) is a study to determine bat species and numbers as well as roosting and foraging

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habits near a portion of Dugout Creek. Two-thousand feet of this creek was culverted. Results of the study were positive for bats. Observations did not include the spotted or big-eared bats. The authors state that the culvert project will not impact the spotted and big-eared bat populations. The premise of their statement is that the project does not include subsidence to cliffs. The proposed SITLA lease area, however, has cliffs within the subsidence zone. The Permittee commits to conducting future bat surveys (along with raptor surveys) in cliff habitat within permit boundary before subsidence (MRP pg. 3-18).

The Permittee must coordinate efforts with the Division and DWR to conduct a bat survey two years before undermining potential cliff habitat (use Plate 3-3 as a reference; R645-301-322.100). The success of this action will depend on the Permittee's awareness of mine scheduling coupled to habitat locations within the zone of subsidence. The Permittee should refer to a mining map overlaid with potential cliff habitat. The Permittee must provide a schedule that estimates timelines of expected bat surveys. These surveys will help determine the need for a protection and mitigation plan(s) (R645-301-332, R645-301-322).

The Perkins and Peterson report recommended a mitigation project for the resident bat populations (not spotted or big eared) that the culvert project might impact. The mitigation project included replanting 7,500' of disturbed riparian streambank by hydroseeding and transplanting willows.

JBR Environmental Consultants also conducted a bat survey in June 2002 for the Degas Wells MW-6 and -8 (amendment withdrew). The amendment paraphrased the results that showed no observations for TES species. The amendment never included a copy of the report. The Permittee mentioned (personal communications 8/11/03) that the bat survey in 2002 was originally required because Dugout planned to mine under escarpments. The Permittee changed plans and never mined in areas of concern. The Permittee stated that there was no bat habitat in the relocated area of the degas wells. The requirement for a bat survey included in the amendment did not apply.

In the Hayden-Wing document (1984; MRP-Appendix 3-3), the consultant provides recommendations for the prairie falcon, Cooper's hawk, and golden eagle observed along the access corridor to the mine facilities area. The prairie falcon nest-sites are on rocky cliffs, ledges, or holes in eroded banks along rivers. The author predicts that the falcons will continue to use the nests throughout the life of the mine and therefore, mitigation may not be necessary for this species. Hayden-Wing recommends to conduct yearly (June) monitoring of the falcon nests. The DWR flyover surveys should satisfy this recommendation, at least for the cliff dwelling birds.

For the Cooper's hawk (tree nesting species), Hayden-Wing recommends to prevent human interference during nesting season, discourage removal of vegetation debris near the nests, provide a fence to inhibit foot and off-road traffic, and conduct yearly monitoring of the

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hawk. The author supports that this species is sensitive to disturbance and recommends implementing precautionary measures to lessen mitigation costs. If the Permittee can show that the hawk left the area before mine construction, then the Permittee should not be held responsible for mitigation of this hawk. The Division does not know the status of this monitoring commitment at this time.

For the golden eagle, Hayden-Wing reports that the area supports nesting habitat of this species. The consultant recommends monitoring this species. The DWR flyover surveys should satisfy this recommendation. Discussions of subsidence-related impact to cliff habitat within the proposed SITLA lease area are in paragraphs below.

The Permittee commits to conduct yearly raptor surveys within a one-mile buffer zone of the surface facilities area (MRP pg. 3-24). The Division, in consultation with DWR (Tony Wright, June 8, 2004) also requires the Permittee to conduct raptor surveys at least two years prior and one year following potential disturbance. The Division and DWR consider that subsidence and subsidence-related events may impact cliff habitat. The Permittee must make modifications to pages 3-33 and 3-34 to reflect the most current requirement concerning subsidence and nest protection.

The Permittee must coordinate efforts with the Division and DWR to monitor raptors at least two years before undermining potential cliff habitat (use Plate 3-3 as a reference). The success of this action will depend on the Permittee's awareness of mine scheduling coupled to habitat locations. The Permittee must refer to a mining map overlaid with potential cliff habitat. (R645-301-332, R645-301-322). This would allow the agencies to determine, in advance, which nests require a protection or mitigation plan. Statements such as those on page 3-32 are only as effective as level of coordination and communication among the parties.

Tony Wright (DWR, personal communications on June 8, 2004) stated that DWR flew over the SITLA lease area in 2004 including Sections 17 and 20 as requested by the Division. Tony Wright also evaluated the site near the DUGO104 and DUGO204 exploration sites for dense canopy habitat, which is essential for Northern goshawks (personal communications June 8, 2004). Logging in the area had compromised the dense canopy habitat making the area unsuitable for goshawks. The Permittee will conduct ground surveys for goshawks in areas planned for disturbance for mining facilities that have suitable habitat. The SITLA Lease Amendment does not include surface disturbance.

The letter drafted by Barry Barnum (1996, Utah Fuel Company; MRP-Appendix 3-3) details a raptor nest protection plan as it relates to subsidence. Mr. Barnum directed to cover nests located in cliffs expected to subside from underground mining. The covers are to remain in place until sensitive areas are safe from subsidence. The letter, however, does not detail which seasons/months the Permittee should cover/uncover the nests before and following undermining.

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The Permittee states they will evaluate raptor nests on a case by case basis and will mitigate using the best technology available. If DWR still recommends covering the nests, the Permittee must provide a table showing individual nest numbers (obtained from flyover results) and years of expected undermining. Details must also include the months recommended by DWR to cover the nests as well as a statement that the Permittee will contact the Division before any protection efforts. The Permittee must apply this agreement to all cliff nests located within the subsidence zone. (R645-301-332).

The 2003 raptor survey covered some of the Dugout Canyon Mine properties, including Section 30 of the proposed SITLA lease area. The flyover map shows a wide diversity of raptor species including redtail hawk, prairie falcon, raven, and golden eagle. The results of the 2003 survey showed six nest that were either tended or active. None were in T13S R13E Section 30. The active nests included one prairie falcon (#6) and two raven nests (#14 and 1303). There were no active or tended golden eagle nests in 2003. DWR states that one possible reason for the low nesting activity of all raptors over the past few years is drought.

The 2004 raptor survey apparently covered all of the SITLA area - DWR had not compiled the data at the time of the conversation.

Threatened and Endangered Species

In order for a person to conduct official surveys, they must fulfill the following sequential requirements: belong to the permit holding corporation, take the species-specific course and exam, submit the application for permit to the USFWS, and record name to the corporate permit records.

The Degassification Amendment contains a copy of the corporate TES permit (exp. 12/31/05) with Mel Coonrod as principal officer. The corporate permits shows that Tom Paluso is authorized to conduct MSO surveys.

The Division will not Consult with USFWS for the SITLA Lease Amendment because there is no plan for surface disturbance. It may be necessary to conduct TES surveys depending on future changes to the SITLA Lease Amendment.

The Methane Degassification Amendment – Attachment 3-2 provides a current TES species list. There is no general threatened, endangered and sensitive species (TES animal and plant) official evaluation that focuses on the SITLA lease area. The main concern that the Division has is the possibility of impact to plant and animal species because of subsidence. The Division contacted the Utah Division of Wildlife Resources (DWR) to determine if they had a concern for TES, sensitive, or candidate species within the proposed lease area. DWR did not have records of occurrence for any threatened, endangered, or sensitive species in T13 S, R13 E, S17, 19-21, 28-30. They mentioned, however, that there are recent records of occurrence in the

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vicinity for ferruginous hawk (over 2 miles from area) and historical records of occurrence for Northern goshawk (approximately 4 miles from area).

The Permittee has conducted site-specific TES surveys over the years. The Methane Degassification Amendment mentions that the bald eagle is the only TES species likely to exist within the exploration area. The eagles may use the area, but usually only during winter months and not during this scheduled project. In addition, for the Degassification Amendment, Dr. Collins conducted a literature search on TES plant species. His results showed that the area includes suitable habitat only for canyon sweetvetch (*Hedysarum occidentale* var. *canone*). Collins did not mention Tufted cryptantha, *Helenium hymenoxys*, or Graham beardtongue in his literature or survey results. This surveyor ground-truthed (June 2003) for TES plant species and observed no TES species growing at any of the degas well sites or reference areas.

The Permittee provided the following information concerning TES species in the Degas Wells MW-6 and -8 (Attachment 3-2; withdrew). Although the survey was not comprehensive and included surveys for TES species not listed for Carbon County, it provided some important resource data. EIS surveyed for twenty-seven plant and two animal species. These species are included on federal threatened and endangered (TE) list for Carbon and Emery counties or on sensitive lists for the area. For the sites evaluated, the results showed "no observation" for all TES species. The survey, however, showed suitable habitat for the following species:

- Last chance townsendia (*Townsendia aprica* – USFS SS; Emery)
- Tufted cryptantha (*Cryptantha caespitosa* - CS; Carbon)
- Canyon sweetvetch (*Hedysarum occidentale* var. *canone* – USFS SS; Manti-LaSal/Carbon)
- *Helenium hymenoxys* (*Hymenoxys helenioides* – CS; Carbon, Emery)
- Bicknell milkvetch (*Astragalus consobrinus* - USFS SS; Manti-LaSal/Emery)
- Basalt milkvetch (*Astragalus subcinerus* – BLM SS; W.Emery)
- Sedge fescue (*Festuca dasyclada* – USFS SS; Manti-LaSal/Emery)
- Graham beardtongue (*Penstemon deaveri* – Utah Heritage Program; extreme northeastern corner of Carbon County)

[Parenthetical information shows species name and DOGM research results for management responsibility; county or forest location.]

Four of the eight species are within Carbon county: tufted cryptantha, canyon sweetvetch, *Helenium hymenoxys*, and Graham beardtongue. The other four species (not in Carbon County) in the list were probably included as an oversight. A June 24, 1995, survey for canyon sweetvetch found this sensitive species along Dugout Creek approximately one-half mile below the gate. The Division is aware of a large population in the permit area in Fish Creek Canyon, and the plant could occur in other parts of the permit area including the proposed SITLA lease area. EIS also surveyed for the loggerhead shrike and burrowing owl. The inventory found no suitable habitat for these animal species.

The *Final Report: Assessing the impact of scale on the performance of GIS habitat models for Mexican Spotted Owl* (David Willey, October 22, 2002 [Incoming 2003; Degas Wells MW-6 and -8; Attachment 3-3]) evaluates the performance of the 1997 and 2000 models developed by Dr. Willey et. al. for predicting MSO habitat. The study included four project areas near Price, but did not include the Dugout mine area. Had the study included the Dugout area, the Permittee could have substituted this study for the required ground-truthing survey.

The Division requested a ground-truth survey for MSO in 2003 for the Degassification Amendment. The Permittee may have conducted a ground-truthing survey, but only submitted a report for a two-year calling survey in 2003 and 2004. The Division reminds the Permittee that a calling survey is only required after ground-truthing results are positive for MSO. The USFWS does not require a two-year calling survey if ground-truthing results are not positive for MSO.

Tom Paluso of Environmental and Engineering Consultants (EIS) conducted the calling survey (May 20 - June 18, 2003 and spring of 2004) for MSO birds within a half-mile radius around the G1-G6 degas well area. The calling procedure included calling at seven different points with points no greater than 0.5 mile apart. The consultant called for 20 minutes using three different calling types. For both the 2003 and 2004 surveys, results showed no MSO responses within a half-mile radius around the G1-G6 degas well area. The results, however, showed responses from Great Horned Owl (5/20/03) and Northern Saw-whet (5/20/03, 6/11/03, 5/5/04, 5/13/04, 5/20/04, and 5/29/04).

The area surveyed for the MSO covers the SITLA Exploration surface disturbance areas and areas along Pace Creek. This survey does not include all potential cliff habitat within the proposed SITLA lease area. The primary concern is the loss of cliff habitat because of subsidence. The Division will consult with DWR over this matter. If DWR recommends ground-truthing cliff habitat over expected undermining, the Permittee must submit a survey program similar to the raptor survey program mentioned above. The Permittee must also submit a protection and enhancement plan if the results are positive for MSO. The Division again reminds the Permittee that if the ground-truthing survey is positive for MSO, then the USFWS requires a two-year calling survey before disturbance (subsidence in the case). The Division will provide the Permittee with the agency decision before the Permittee responds to this SITLA Amendment (2004). A protection/mitigation plan may be required. (R645-301-332, R645-301-320).

Findings:

The Division considers information in the application inadequate to meet the minimum Fish and Wildlife Resource Information section of the Environmental Resource Information regulations. The MSO requirements are not listed below because the Division is currently

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consulting with DWR. The Division will present decisions as soon as they become available. Prior to approval, the Permittee must act in accordance with the following:

R645-301-322.200, Provide requested information for the follow up study on the effects of mining on wildlife. • Provide requested information for the wildlife monitoring commitments and mitigation efforts.

R645-301-332, R645-301-320 , Provide the information requested concerning bats including a schedule that estimates timelines of expected bat surveys. • Provide the information requested concerning raptors including coordinating the mine plan with potential cliff habitat.

R645-301-332, Describe the requested raptor protection measures in section 332.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Archeological Site Maps

There is an archeological map for the northwestern corner of proposed SITLA lease area. John Senulis May 2004 *An Intensive Cultural Resource Survey And Inventory Of The 2004 Dugout Canyon Mine Exploration Drill Holes And Access Roads*. The Permittee will place all maps in the SITLA Lease Amendment and stand-alone amendments in the Confidential File as required above.

Vegetation Reference Area Maps

Plate 3-1 in the MRP provides the vegetation communities. The MRP does not provide a vegetation map that shows all the reference areas. The Division typically requests two vegetation maps: one that shows the entire area (Plate 3-1 is adequate) and one that details the reference and proposed disturbed areas. The second map must show the location and boundary of the newly assigned reference and proposed disturbed areas. The Division recommends to follow DOGM Vegetation Information Guidelines (pg. 3) that requires the second map drawn at a scale, such as 1"=400'. Because the Dugout Mine is spread over an expansive area, especially when considering the refuse pile, the Division request that the Permittee provide the following: map titles and numbers, reference area names, and map locations (MRP or title of stand-alone amendment). This information will provide the Division with a consolidated list in the MRP of

all the reference areas for the mine and where to locate related maps. As it is, maps showing the required reference areas are in many different documents. Place this information in section 323. (R645-301-323.100).

Findings:

The Division considers information in the application inadequate to meet the minimum Maps, Plans, and Cross Section Resource Information section of the Environmental Resource Information regulations. Prior to approval, the Permittee must act in accordance with the following:

R645-301-323.100, Provide vegetation-related map titles and numbers, reference area names, and map locations in section 323.

OPERATION PLAN

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR 784.17; R645-301-411.

Analysis:

There are no known public parks or historic places within the proposed SITLA lease area that require protection.

Findings:

The Division considers information in the application adequate to meet the minimum Protection of Public Parks and Historic Places section of the Operation Plan regulations.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

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Analysis:

Protection and Enhancement Plan

All of the information concerning the biology-related operation plan for the SITLA Lease Amendment is in the MRP. The Permittee did not provide additional information.

The Permittee must provide information on the follow-up wildlife study to determine the effects of mining and the wildlife-monitoring project. The details for these two requirements are above in the Environmental Section.

As detailed above, the Permittee commits to conduct future bat surveys in cliff habitat within permit boundary before subsidence (MRP pg. 3-18). Details for survey-timing requirements are above in the Environmental Section. If there is cliff habitat within the subsidence zone for the proposed SITLA lease operations, the Permittee must provide a protection or mitigation for bat populations.

The Permittee implemented a vegetation mitigation project in exchange for impacting local bat populations around 1997. The project may be still on going with the need to transplant additional willows. The MRP details this mitigation project (pg. 3-19 through 3-20).

The Environmental Section provides details for timing and location requirement of raptor surveys as well as requests additional information for the proposed protection plan such as the plan described by Barnum (1996, MRP).

The Division is currently consulting with DWR over the MSO requirements (if any) for the SITLA Lease Amendment. A protection/mitigation plan for potential habitat within the subsidence zone may be required.

Endangered and Threatened Species

Adverse effects of mining on water quantity to the Colorado River drainages do affect four Colorado River endangered fish species (Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker). The USFWS considers water depletion to the Colorado River drainage as a potential jeopardy to these endangered fish. Water users may be required to mitigate if the overall water consumption is greater than 100 acre-feet per year. Currently, the mitigation fee is approximately 16.00 per acre-foot of depletion, but may change marginally from year to year. "If operations include use of surface waters which otherwise would have reached the Colorado River, for any purpose, including dust suppression, then a formal Consultation must be initiated" (Robert Williams USFWS 1993; letter concerning Banning).

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The Permittee must address possible adverse affects to these four fish species by first calculating the amount of water used by all mining operations. (R645-301-333). The "Windy Gap Process" provides a guideline to calculate water consumption for coal mining. The Permittee may obtain the "Windy Gap Process as it Applies to Existing Coal Mines in the Upper Colorado River Basin" (Discussion Paper) from the Division (801-538-5214). The Permittee must also include equations for water consumed from dust suppression programs. In brief, consumption values must at least include the following:

- Mining consumption
- Ventilation consumption
- Coal producing consumption
- Ventilation evaporation
- Sediment pond evaporation
- Springs and seep effects from subsidence
- Alluvial aquifer abstractions into mines
- Alluvial well pumpage
- Deep aquifer pumpage
- Postmining inflow to workings
- Coal moisture loss
- Direct diversions
- Dust suppression (not mentioned in Windy Gap).

Dugout Creek is within the drainage of the Green River. Through effects of water quantity and quality on the river, the mine could potentially adversely affect the four Colorado River endangered fish species. The Permittee must provide all evidence and equations leading to the sum of water consumption. The Division reminds the Permittee to submit all equations in a clear and orderly format.

Bald and Golden Eagles

There are many raptor nests within the Dugout properties including golden eagles. There are no known bald eagle nests. This project will not include any surface disturbance for facilities, but cliff habitat occurs within the subsidence zone. Sections above detail measures to survey and protect golden eagle and other raptor nest.

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

Mining operations will result in subsidence within the permit area. The MRP does not adequately address the impacts of or provide a mitigation plan for the subsidence to streambank habitat. The area has plenty of springs, unnamed drainage in Section 20 and 29, and Pace Creek. There are stretches of Pace Creek that are ephemeral (DWR; personal communication 2004) and

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others that are perennial. The Division is concerned that subsidence may impact wildlife dependent on streambank habitat.

The Division does not consider that Permittee could adequately address impact to wildlife given that there is limited to no information for these high-value areas. For example, there is no related data on vegetation, amphibians, or mollusks for these areas. DWR states that the surrounding area makes it likely that amphibians (probably tiger salamander) would be impacted if ponds associated with springs in the area were lost. Springs may also serve as refuge for isolated populations of mollusks. Historical records for one rare mollusk (*Physella virgata*) exist for Carbon County. Loss of macroinvertebrates may be an issue to consider when looking at impacts on animals such as bats and birds. The Permittee must describe short-term and possible long-term impacts to species dependent on the springs, creeks, and drainages. This information must go into section 332. (R645-301-332, R645-301-320).

The Permittee states that damage caused by subsidence to these high-value habitats will naturally heal. This assumption is not adequate and the Permittee must provide a mitigation plan for the subsidence to streambank habitat. The plan must include detail of the project, dates of implementation, location of project, and overseeing agencies for the project. This information must go into section 332. The Permittee must coordinate with the Division to determine data requirements and to develop a mitigation plan. (R645-301-332; R645-301-320).

There are many concerns centered on subsidence within the proposed SITLA lease area. The Permittee may state that there is no probable impact to plants and wildlife in high-value habitats because of the amount of overburden. The Permittee must present ground-truthing data clearly showing that subsidence within the same geological formations at the Dugout mine support the selected degree of angle of draw as well as stated degree of impact. It is not clear, how the statements on pages 5-28 through 5-31 relate to control measures or adequately address impacts to high-value habitat caused by subsidence.

Findings:

The Division considers information in the application inadequate to meet the minimum Fish and Wildlife Information section of the Operation Plan regulations. The Division will visit the bat-mitigation site to evaluate the progress and to see the installation of the "habitat enhancement structures within Dugout Creek upstream from the proposed disturbed area" as requested by DWR. Prior to approval, the Permittee must act in accordance with the following:

R645-301-333, Provide all equations and justifications with supporting documentation leading to the overall sum of water depletions/additions for all mining operations and explorations.

R645-301-332, R645-301-320, Provide the requested information related to subsidence and high-value habitats near springs, drainages, and Pace Creek.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

The mitigation plan for subsidence of springs, drainage, and Pace Creek may include a vegetation component. The Division in coordination with DWR and the Permittee will develop the details of the methods and plant species.

Findings:

The Division considers information in the application adequate to meet the minimum Vegetation section of the Operation Plan regulations.

RECOMMENDATIONS:

Do not approve the amendment until the Permittee addresses all deficiencies.